

Title (en)

PIEZOELECTRIC DEVICE, AND PIEZOELECTRIC DEVICE MANUFACTURING METHOD

Title (de)

PIEZOELEKTRISCHE VORRICHTUNG UND VERFAHREN ZUR HERSTELLUNG EINER PIEZOELEKTRISCHEN VORRICHTUNG

Title (fr)

DISPOSITIF PIÉZOÉLECTRIQUE ET PROCÉDÉ DE FABRICATION DE DISPOSITIF PIÉZOÉLECTRIQUE

Publication

**EP 3859802 A4 20220727 (EN)**

Application

**EP 19866124 A 20190920**

Priority

- JP 2018185550 A 20180928
- JP 2019061630 A 20190327
- JP 2019037070 W 20190920

Abstract (en)

[origin: EP3859802A1] For a piezoelectric device, an optical characteristic and/or a piezoelectric characteristic is improved. A piezoelectric device has a first electrode layer, a second electrode layer, and a piezoelectric layer provided between the first electrode layer and the second electrode layer, wherein the piezoelectric layer is formed of a wurtzite crystal material as a main component, to which one or more elements is/are added, said one or more elements being transparent when turned into an oxide, and wherein a haze value is 3% or less, and transmittance with respect to light having a wavelength of 380 nm is 50% or more.

IPC 8 full level

**H01L 41/187** (2006.01); **C23C 14/08** (2006.01); **H01L 41/053** (2006.01); **H01L 41/316** (2013.01); **H01L 41/319** (2013.01)

CPC (source: EP KR US)

**C23C 14/08** (2013.01 - EP KR); **C23C 14/086** (2013.01 - EP); **H10N 30/057** (2023.02 - US); **H10N 30/076** (2023.02 - EP KR US); **H10N 30/079** (2023.02 - EP KR US); **H10N 30/508** (2023.02 - US); **H10N 30/708** (2024.05 - EP KR US); **H10N 30/853** (2023.02 - EP KR US)

Citation (search report)

- [X] CN 207036312 U 20180223 - UNIV HEILONGJIANG
- [X] US 6590336 B1 20030708 - KADOTA MICHIO [JP]
- [E] EP 3605627 A1 20200205 - NITTO DENKO CORP [JP]
- [X] LIU YIJIAN ET AL: "Solidly mounted resonators fabricated for GHz frequency applications based on Mg<sub>x</sub>Zn<sub>1-x</sub>O piezoelectric film", VACUUM, vol. 141, 14 April 2017 (2017-04-14), pages 254 - 258, XP085018216, ISSN: 0042-207X, DOI: 10.1016/J.VACUUM.2017.04.012
- [X] YING CHEN ET AL: "Studies on Mg/sub x/Zn/sub 1-x/O thin film resonator for mass sensor application", FREQUENCY CONTROL SYMPOSIUM AND EXPOSITION, 2005. PROCEEDINGS OF THE 2 005 IEEE INTERNATIONAL VANCOUVER, BC, CANADA AUG. 29-31, 2005, PISCATAWAY, NJ, USA, IEEE, 29 August 2005 (2005-08-29), pages 142 - 145, XP010877154, ISBN: 978-0-7803-9053-9, DOI: 10.1109/FREQ.2005.1573916
- [X] ABBASSI A ET AL: "First-principles study on the electronic and optical properties of Si and Al co-doped zinc oxide for solar cell devices", APPLIED PHYSICS A, SPRINGER BERLIN HEIDELBERG, BERLIN/HEIDELBERG, vol. 122, no. 6, 10 May 2016 (2016-05-10), pages 1 - 7, XP035681712, ISSN: 0947-8396, [retrieved on 20160510], DOI: 10.1007/S00339-016-0111-Y
- See also references of WO 2020066930A1

Designated contracting state (EPC)

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DOCDB simple family (publication)

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DOCDB simple family (application)

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